

Procedure

Confined Spaces



1. Purpose

To ensure all confined spaces within Department of Planning, Transport and Infrastructure workplace are identified and assessed prior to entry, and that hazards and associated risks are appropriately controlled.

2. Scope

This procedure applies to all DPTI workers.

3. Definitions

TERM	DEFINITIONS
Atmospheric Testing	The measurement of oxygen concentration or airborne contaminants that is not continuous.
Authorised Person	The Authorised Person is a person nominated by their manager, coordinator or supervisor who is responsible for the issue of the confined space entry permit. The Authorised Person is the member of the confined space entry team who is in control of the confined space work area and is required to not enter the confined space.
Bump test	A functional test of atmospheric monitoring equipment to ensure that the sensors will respond to a known concentration of test gas that is sufficient to activate all alarm settings.
Competent Person	A person who has, through a combination of training, education and experience, acquired knowledge and skills enabling that person to perform a specified task correctly.
Lower Explosive Level (LEL)	The concentration of a flammable contaminant in air below which the propagation of a flame does not occur on contact with an ignition source.
Safe Atmosphere	A safe atmosphere in a confined space is one that: <ul style="list-style-type: none">• has a safe oxygen level (concentration of oxygen of between 19.5% - 23.5%);• is free of airborne contaminants or any airborne contaminants are in concentrations below their allowable exposure standard (which may be zero); and• has any flammable gas or vapour in the atmosphere at concentrations below 5% of its lower explosive limit (LEL).
Standby Worker / Person	A person who is trained in confined space entry and is assigned to remain on the outside of, and in close proximity to, the confined space. Can also act as the Authorised Person if determined by the risk assessment process.

TERM	DEFINITIONS
Worker	Any person who carries out work in any capacity for the department, and may include: <ul style="list-style-type: none"> • employees; • trainees; • volunteers; • outworkers; • apprentices; • work experience students; • contractors or sub-contractors; • employees of a contractor or sub-contractor; or • employees of a labour hire company assigned to work for DPTI.
Workplace	Any place where a worker works and includes any place where a worker goes, or is likely to be, while at work.

4. Procedure detail

4.1 What is a confined space

A confined space is:

- enclosed or partially enclosed;
- at normal atmospheric pressure during occupancy;
- not designed or intended for human occupancy; and
- poses a risk to health and safety from one or more of the following:
 - an atmosphere that does not have a safe oxygen level; or
 - contaminants that may cause injury from fire or explosion; or
 - harmful concentrations of any airborne contaminants; or
 - engulfment.

See *Appendix 1* for examples of confined space assessments against the above criteria.

DPTI workers are prohibited from entering a confined space unless appropriately trained and qualified in confined space entry.

4.2 Identification of a confined space

Confined spaces may be identified by one or more of the following:

- assessment by a competent person and review by a manager/supervisor who has appropriate knowledge of the site;
- referring to the confined space register for the site; or
- confined space signage is located at all entry/exit points to the space.

The [Confined Space Hazard Identification and Risk Assessment Form](#) includes the criteria for assessing confined spaces and must be used by DPTI managers/supervisors in consultation with workers who are appropriately trained and qualified in confined space entry.

4.2.1 Confined Space Register

All confined spaces identified at a DPTI workplace must be recorded on a confined space register.

A confined space register must be developed for each DPTI workplace utilising the [Confined Space Register Template](#).

The confined space register must be stored in KNet and made available at all sign-in facilities for the workplace.

4.2.2 Confined Space Signage

Confined spaces must be identified by signs at all entry/exit points during a confined space entry and while the confined space is accessible. Where practicable, confined spaces should be permanently signposted, and should at all times be secured against unauthorised entry.

Confined space signage must include:

- for permanently fixed signage, the unique identifying number of that confined space as recorded in the confined space register;
- a hazard 'danger' symbol; and
- a statement advising that authorised persons only may enter (i.e. a confined space entry permit is required).

4.3 Hazard identification and risk assessment

If a space has been identified as a confined space, Managers/Supervisors must ensure that competent person/s complete a hazard identification and risk assessment using the [Confined Space Hazard Identification and Risk Assessment Form](#).

Where an initial hazard assessment indicates the potential for novel airborne contaminants, and/or the assessment team does not possess the knowledge or expertise required to comprehensively identify all airborne contaminant hazards, particular additional assessment team personnel may be required (e.g. occupational hygienist). [Contact the Safety Section](#) for further advice as required.

Completed risk assessments must be stored in KNet and recorded on the workplace's Confined Space Register.

4.3.1 Confined Space Entry Risk Assessment

An existing risk assessment may be used for a confined space entry, provided a thorough review is undertaken by the authorised person, and any amendments are documented.

Existing assessments must be reviewed, and if necessary revised:

- following an incident or near miss;
- where there is evidence that the risk control is no longer effectively controlling the risk;
- when a new hazard or risk is identified;
- when a change is made at the workplace that is likely to create a new or different risk that existing measures may not effectively control;
- following a change to the legislation or approved Code of Practice related to confined spaces;
- if a Health and Safety Representative or other worker requests a review; or
- every three years.

4.4 Risk controls

Controls must be developed and implemented to achieve the highest level of protection that is reasonably practicable for all identified confined spaces. Control measures must be documented on a confined space entry permit.

4.4.1 Confined Space Entry Permit

The Confined Space Entry Permit is a document that is used to record all elements of a confined space entry.

The Confined Space Entry Permit must be completed in writing using the [Confined Space Entry Permit Form](#), and signed by the Authorised Person prior to any person entering the confined space.

A permit may be required for varying periods of time depending on the time required to complete the work being carried out in a confined space. The permit should be re-validated if the person with direct control of work in the space changes, a break in work continuity occurs,

changes are made to the work that introduce hazards not addressed by the current permit, or new controls measures are needed.

At the completion of the confined space entry, the following activities must be completed:

- Removal of all tools and equipment from the confined space.
- Confirm that all workers have exited the confined space.
- De-activate the Confined Space Entry Permit after confirmation all workers have exited the confined space.
- Return asset to service.

Confined space entry permits must be stored in KNet and recorded on the workplace's Confined Space Register.

4.4.2 Confined space entry team

A confined space entry team must include the authorised person (permit holder), a standby person, and an entrant.

The authorised person may also act as the standby person if considered to be appropriate based on risk assessment. The standby person must remain outside of the confined space at all times for the duration of the confined space entry.

The confined space entry team may be expanded to include additional standby or entrant personnel based on the work to be undertaken and the outcome of the confined space risk assessment including emergency response requirements.

4.4.3 Training and Competency

All confined space entry team members must be appropriately trained and qualified in confined space entry.

If a confined space entry is required and no suitably qualified DPTI workers are available, a competent contractor must be engaged and must produce evidence of Confined Space Entry competency.

Current nationally recognised training requirements for conducting work within confined spaces are as follows:

National Code	Unit Title	Refresher
MSAPMPER200C	Work in accordance with an issued permit	Every two years
MSAPMPER205C	Enter Confined Space	
MSAPMOHS217A	Gas Test Atmospheres	

Standby persons must also be trained in 'Provide First Aid' (also known as Senior First Aid), including the following units of competency:

National Code	Unit Title	Refresher
HLTAID001	Provide cardiopulmonary resuscitation	Every year
HLTAID002	Provide basic emergency life support	Every three years
HLTAID003	Provide first aid	

Bookings for training courses must be organised in partnership with [Organisational Performance and Development](#).

4.4.4 Access equipment and Personal Protective Equipment (PPE)

All equipment must be inspected and, where required, have a current test tag attached. All workers involved in confined space work must be supplied with, and trained in, the use of appropriate confined space access equipment and PPE for the task to be undertaken.

When selecting confined space access equipment and PPE for entering a confined space, the following must be taken into account:

- the work to be undertaken;
- conditions within the space (i.e. wet, slippery, hot);
- size and location of entry points;
- impacts PPE may have on workers, work in the space and rescue from the space; and
- the number of workers entering the confined space.

4.4.5 Communication and monitoring

In preparation for confined space entry, the authorised person must assign a standby person to continuously monitor the wellbeing of all persons inside the space. Where practicable, the standby person should observe the work being carried out.

The standby person must never leave the confined space entry point under any circumstances whilst workers are in the space.

A communication system must be confirmed prior to entering the confined space to enable communication between the entrants and the standby person, and to summon help in an emergency. Depending on the conditions within the confined space, communication can be achieved by voice, radio, hand signals or other suitable methods.

In providing communication and ongoing monitoring, the standby person will:

- Understand the nature of the hazards inside the particular confined space and be able to recognise that the workers in the space are showing unusual signs or symptoms in their behaviour or movement.
- Remain outside the confined space and do no other work which may interfere with their primary role of monitoring the workers inside the space.
- Have all required rescue equipment (e.g. safety harnesses, lifting equipment, a lifeline) immediately available.
- Have the authority to order workers to exit the space if any hazardous situation arises.
- Activate emergency procedures if required.

THE STANDBY PERSON MUST NEVER ENTER THE CONFINED SPACE TO UNDERTAKE A RESCUE.

4.4.6 Atmospheric Testing and Monitoring

Atmospheric testing must be undertaken immediately prior to entry of any confined space where practicable, and no more than one hour prior to entry.

Atmospheric testing must be carried out by a competent person in accordance with the training requirements detailed in *Section 4.4.3*.

If there are no appropriately trained and qualified DPTI workers to perform atmospheric testing, a competent contractor must be engaged and produce evidence of competency prior to commencement.

Atmospheric testing equipment

Atmospheric testing must be carried out with an approved gas monitoring device (i.e. compliant with *AS 60079.29.2*). Atmospheric testing equipment must be used and maintained in accordance with manufacturers requirements and must have a current calibration sticker visible on the device.

All atmospheric testing equipment must be inspected prior to use and verified as being appropriately calibrated and fit for use. This shall include verification of the last calibration date; battery check; zeroing of the device; and a bump test of the device.

Atmospheric testing equipment must be suitable for the hazards identified as relevant to the particular confined space under consideration. This may require specialised equipment where the presence and concentration of identified airborne contaminants cannot otherwise be detected.

Unsafe atmosphere

Where the hierarchy of risk control measures cannot provide a concentration of oxygen in the atmosphere greater than 19.5% or the airborne contaminants that may cause impairment, loss of consciousness or asphyxiation cannot be reduced to below the relevant exposure standards, no person shall enter the confined space unless they are equipped with supplied-air respiratory protection and where appropriate, PPE.

Flammable Gases and Vapours

Where flammable/explosive gas, vapour or mist is present in the atmosphere, the concentration must be maintained at a level below 5% Lower Explosive Limit (LEL), so far as is reasonably practicable.

If it is not reasonably practicable, and the concentration of any flammable gas, vapour or mist in the atmosphere of the confined space:

- is equal to or greater than 5% but less than 10% of its LEL —
 - no person shall enter the confined space except for a rescue response; and
 - all persons are immediately removed from the space unless a suitably calibrated, continuous-monitoring flammable gas detector is in use.
- is equal to or greater than 10% of its LEL —
 - all persons are immediately removed from the space.

Where a flammable atmosphere may exist in a confined space and there is a risk of fire and explosion, all ignition sources in the vicinity must be eliminated.

<p><i>Before Entry</i> Up to 5% LEL Safe to Enter</p>	<p><i>Above 5% after entry?</i> Up to 10% LEL Continuous monitoring required</p>	<p>Above 10% LEL Evacuate Confined Space</p>
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4.5 Prior to entry to a confined space

Entry to a confined space is considered to have occurred when a person’s head or upper body is within the boundary of the confined space. Inserting an arm for the purpose of atmospheric testing is not considered as entry to a confined space.

Prior to entry to a confined space, DPTI workers and managers/supervisors must:

- Review the risk assessment and SWMS to ensure they are relevant for the work being conducted.
- Provide continuous monitoring of atmospheric contaminants in the space.
- Where entry is from a roadway, driveway or car park, develop and implement a Traffic Control Plan.
- Have a completed and approved [Confined Space Entry Permit](#).
- Provide appropriate PPE and instruction on its proper care and use to all workers who enter the confined space.

- Provide appropriate communication devices so as to ensure continuous communication between entrants and standby person/s.
- Ensure emergency and rescue equipment is available and in good working order.

4.6 Emergency procedures

Managers/supervisors must ensure first aid and rescue procedures are developed and documented on the confined space entry permit prior to entry to a confined space. First aid and rescue procedures must be rehearsed with relevant workers to ensure that they are efficient and effective.

When developing emergency procedures, the confined space entry team must give consideration to the following factors:

- The nature and location of the confined space.
- Communications from within the confined space to the standby person.
- Communications from the location of the work to emergency services.
- Rescue equipment (e.g. rescue tripod and winch) and the availability of trained workers.
- The physical capabilities of rescuers.
- Environmental conditions.
- Appropriate first aid and resuscitation equipment and the availability of trained workers.
- The ability for local emergency services to respond and provide assistance in emergency situations.

Where practicable, a rescue should be performed from outside the confined space. Rescuers must be provided with, and wear, appropriate breathing apparatus if they enter a confined space in an emergency.

If a person inside a confined space has been incapacitated by a lack of oxygen or airborne contaminants, it must always be assumed that entry for rescue is unsafe unless air-supplied respiratory protective equipment is used.

5. Record management

Any records and documentation pertaining to this procedure must be maintained in accordance with legislative and departmental record keeping processes. Refer to the [DP009 Recordkeeping Policy](#) for information regarding records management.

6. Roles and responsibilities

ROLE	RESPONSIBILITIES
Managers	Managers must: <ul style="list-style-type: none"> • provide adequate resources to comply with this procedure; and • ensure a current confined space register is maintained for every departmental workplace within their area of responsibility.
Supervisors	Supervisors must: <ul style="list-style-type: none"> • implement a systematic process to identify confined spaces in departmental workplaces within their area of responsibility; • communicate, consult, instruct and supervise workers involved in confined space activities; • ensure all workers involved in confined space activities have current and appropriate training; • ensure adequate and appropriate rescue plans are developed and rehearsed by confined space entry teams; • regularly monitor and review the effectiveness of risk controls and implement corrective actions and treatment plans where required; and • report incidents related to confined space activities.

ROLE	RESPONSIBILITIES
Authorised person	Authorised persons must: <ul style="list-style-type: none"> • be trained in confined space entry; • identify and assess the hazards associated with entry into and working in a confined space; • ensure that effective controls are developed and implemented prior to authorising a confined space entry permit; • act as the standby person when deemed appropriate after undertaking the risk assessment process; • order work to cease and for confined space entrants to exit if a hazardous condition affecting safety is suspected or if control measures can no longer be maintained; and • cancel the entry permit once works are completed, and all persons and equipment are accounted for.
Standby Person	Standby persons must: <ul style="list-style-type: none"> • be trained in confined space entry; • remain outside the confined space and do no other work which may interfere with their primary role of monitoring the workers inside the space; • have all required rescue equipment immediately available; • have the authority to order workers to exit the space; • maintain continuous communication with and, if practicable, able to observe those inside the confined space; and • initiate rescue procedures if necessary but never enter the confined space to attempt a rescue.
Workers	Workers must: <ul style="list-style-type: none"> • comply with this procedure, local procedures and reasonable instructions given relating to entering and working within confined spaces; • sign in and out of an authorized confined space entry permit for all confined space entries; • not enter a confined space prior to undertaking training and being assessed as competent; and • not enter a confined space without the attendance of a standby person.

7. Supporting documentation

- [Confined Space Hazard Identification and Risk Assessment Form](#)
- [Confined Space Entry Permit Form](#)
- [Confined Spaces Register Template](#)
- [WHS Risk Management Procedure](#)

8. References

- [Work Health and Safety Act 2012 \(SA\)](#)
- [Work Health and Safety Regulations 2012 \(SA\)](#)
- [Confined Spaces Code of Practice](#)
- AS 2865 Confined Spaces Australian Standard
- AS 60079.29.2 Explosive atmospheres Gas detectors - Selection, installation, use and maintenance of detectors for flammable gases and oxygen

9. Appendix

Appendix 1: Confined Space Criteria and Examples

10. Document Amendment Record

Date	Version	Revision Description
04 January 2019	1.0	Original Version
Document Review Schedule		3 Yearly

Appendix 1: Confined Space Criteria and Examples

Description of the space and activity	Confined Space Criteria						Confined space? If the answer to A, B, C and at least one of D is yes, then the space is a confined space.
	A	B	C	D			
	Is the space enclosed or partially enclosed	Is the space not designed or intended to be occupied by a person	Is the space designed or intended to be, at normal atmospheric pressure while any person is in the space	Harmful airborne or flammable contaminants	An unsafe oxygen level	Engulfment	
Sewer with access via a vertical ladder	✓	✓	✓	✓	✓	✓	Yes
Dislodging grain from a silo with sole access through a manhole at the top	✓	✓	✓	✓	✗	✓	Yes
Cleaning spilled cadmium pigment powder in a shipping container	✓	✓	✓	✓	✗	✗	Yes
Inspecting a fuel tank in the wing of an aircraft	✓	✓	✓	✓	✗	✗	Yes
Dislodging a sludge blockage in a drain pit	✓	✓	✓	✓	✓	✓	Yes
Internal inspection of a new, clean tank prior to commissioning	✓	✓	✓	✗	✗	✗	No
Internal inspection of an empty cement silo through a door at ground level	✓	✗	✓	✗	✗	✗	No
Stocktake using an LPG forklift in a fruit cool store	✓	✗	✓	✓	✗	✗	No
Installing insulation in a roof cavity	✓	✓	✓	✗	✗	✗	No